

### **REMARKS**

Reconsideration of the present application is requested. Claim 23 has been added. Claims 1-23 are pending. No new matter has been added. Support for new claim 23 may be found, for example, in the first full paragraph on page 29 of Applicants' Specification.

### **REJECTION UNDER 35 U.S.C. § 112**

The Examiner rejects claims 1, 7 and 13 under 35 U.S.C. § 112 as being indefinite. In particular, the Examiner believes it is unclear whether the temperature of the LCD panel must be both within the predetermined range and not more than  $\pm 3^{\circ}$  of a predetermined target temperature. Office Action at 2. Applicants disagree with this rejection.

In claim 1, for example, the "heater control means," controls "start and stop of heating by the heater, in such a manner as to keep a temperature of the liquid crystal panel to be not more than  $\pm 3^{\circ}\text{C}$  of a predetermined target temperature which is within a range between  $33^{\circ}\text{C}$  and  $63^{\circ}\text{C}$ ." But, claim 1 does not require that the actual temperature of the liquid crystal panel is kept within the range between  $33^{\circ}\text{C}$  and  $63^{\circ}\text{C}$ . In one example, the actual temperature may be less than  $33^{\circ}\text{C}$  or greater than  $63^{\circ}\text{C}$ , for example, between  $30^{\circ}\text{C}$  and  $66^{\circ}\text{C}$ .

For at least the foregoing reasons, claim 1 is definite and in accordance with 35 U.S.C. § 112. Moreover, claims 7 and 13 are in accordance with 35 U.S.C. § 112 for at least somewhat similar reasons.

## **PRIOR ART REJECTIONS**

### **REJECTION UNDER 35 U.S.C. § 103 IN VIEW OF MIYATA AND DAVIS**

The Examiner rejects claims 1-2, 4-8, 10-14 and 16-22 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Application Publication No. 2002/0033789 ("Miyata") in view of U.S. Patent No. 5,027,111 ("Davis") and further in view of U.S. Patent No. 5,694,147 ("Gaalema"). This rejection is respectfully traversed.

The liquid crystal display of claim 1 includes, *inter alia*, a heater control means for controlling, "start and stop of heating by the heater, in such a manner as to keep a temperature of the liquid crystal panel to be not more than  $\pm 3^{\circ}\text{C}$  of a predetermined target temperature which is within a range between  $33^{\circ}\text{C}$  and  $63^{\circ}\text{C}$ ."

The Examiner correctly recognizes that neither Miyata nor Davis discloses or fairly suggests the above-discussed feature, but relies upon column 5, line 55 – column 6, line 30 of Gaalema to make up for this deficiency. Gaalema, however, also fails to teach or suggest this feature, and thus, even in combination – assuming *arguendo* such a combination could be made, which Applicants do not admit – the references fail to render claim 1 obvious.

According to Gaalema, when a temperature reaches a certain preselected level (e.g., target temperature of  $40^{\circ}$ ), differential amplifier 40 has no output and the heating arrangement 24 is not turned on. However, as the temperature decreases below  $40^{\circ}$ , the output from differential amplifier 40 increases thereby

activating the control heating arrangement 24. When activated, the heating arrangement 24 heats the liquid crystal material 14 disposed over integrated circuit substrate 12. In Gaalema, both the sensed and the 40° threshold temperature refer to *ambient temperatures*, but not "a temperature of the liquid crystal panel," of claim 1. Moreover, Gaalema is silent with regard to controlling start and stop of heating by the heater such that "a temperature of the liquid crystal panel," is "*not more than  $\pm 3^{\circ}\text{C}$  of a predetermined target temperature,*" as required by claim 1.

Moreover, according to column 5, line 56 – column 6, line 6 of Gaalema, when voltage is applied to sensing arrangement 26, the Wheatstone bridge formed by resistors 32, 34, 36, and 28 causes the voltages at nodes 1 and 2 to *vary depending on the resistances of the temperature-dependent resistors 34 and 36*. Gaalema discloses a threshold value of 40°C and temperature dependency, but fails to numerically specify a temperature *range* of the liquid crystal panel. Accordingly, Gaalema fails to disclose or fairly suggest a "heater control means for controlling start and stop of heating by the heater, in such a manner as to keep a temperature of the liquid crystal panel to be not more than  $\pm 3^{\circ}\text{C}$  of a predetermined target temperature which is *within a range between 33°C and 63°C,*" as required by claim 1.

Further still, Gaalema also fails to disclose or fairly suggest any *controlling of start and stop of heating by the heater*, and thus, fails to disclose or suggest at least a "heater control means for *controlling start and stop of heating by the heater,*" as required by claim 1.

For at least the foregoing reasons, claim 1 distinguishes over Miyata, Davis and/or Gaalema, taken singly or in combination. Independent claims 7 and 13 distinguish over Miyata, Davis and/or Gaalema for at least somewhat similar reasons. Claims 2, 4-6, 8, 10-12, 14 and 16-22 distinguish over Miyata, Davis and/or Gaalema at least by virtue of their dependency from Claims 1, 7 or 13.

#### **FURTHER PRIOR ART REJECTION**

The Examiner further rejects claims 3, 9 and 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Miyata, Davis, Gaalema and further in view of U.S. Patent No. 7,106,287 ("Ham"). This rejection is respectfully traversed.

The Examiner correctly recognizes that none of Miyata, Davis or Gaalema discloses or fairly suggests the features of claim 3, but again relies upon column 6, lines 44-54 discussing FIG. 6 of Ham to allegedly teach these features, without any mention or rebuttal to the arguments set forth in Applicants' previous response. For the following reasons, Applicants' continue to submit that the combination of Miyata, Davis, Gaalema and/or Ham fails to render claim 3 *prima facie* obvious.

According to column 6, lines 44-54 of Ham, a data modulator 52a includes look-up tables 64a to 64n. Look-up tables 64a to 64n store modulating data for each temperature interval within a temperature range and receive the most significant bits of source data. A switch 65 selects modulating data from one of the look-up tables 64a to 64n in accordance with a sensed

temperature from the liquid crystal display panel 57. Ham does not, however, disclose a look-up table, "arranged so as to correspond to the target temperature," as required by claim 3, for example. By contrast, the switch 65 of Ham merely selects modulating data from one of a plurality of look-up tables 64a-64n based on temperature. Ham does not disclose or suggest that the arrangement of these look-up tables corresponds to any target temperature.

For at least the foregoing reasons, claim 3 is patentable over Miyata in view of Davis, Gaalema and/or Ham. Claims 9 and 15 are patentable over Miyata, Davis, Gaalema and/or Ham for at least somewhat similar reasons.

### **NEW CLAIM 23**

Applicants have added new claim 23 by way of this response. New claim 23 is believed to be allowable by virtue of its dependency from claim 1, and also because none of the art cited by the Examiner discloses or suggests, a heater control means that "controls start and stop of heating by the heater *irrespective of ambient temperature*," as required by claim 23.

### **CONCLUSION**

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-23 in connection with the present application is earnestly solicited.

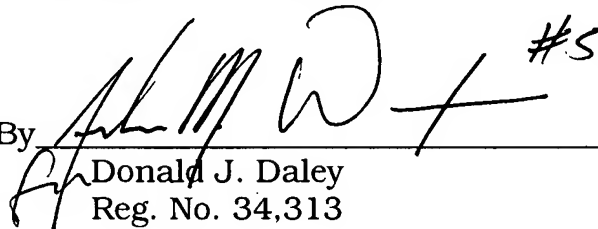
If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Andrew M. Waxman, Reg. No. 56,007, at the number of the undersigned listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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